

Student: _____

Group: _____

Lecturer: *A.S. Eremenko*

HOMEWORK #1

DIRECTIONS: Perform the operations indicated below. Show all work neatly on separate sheet(s) of paper. Write the final answers in the spaces provided.

Convert the following binary numbers to their decimal equivalents:

1) $10010110_2 = \underline{\hspace{2cm}}_{10}$

2) $1001111_2 = \underline{\hspace{2cm}}_{10}$

3) $10000001_2 = \underline{\hspace{2cm}}_{10}$

Find the following binary sums:

4) $1010_2 + 101_2 = \underline{\hspace{2cm}}_2$

5) $1111_2 + 1_2 = \underline{\hspace{2cm}}_2$

Find the following binary differences:

6) $1010_2 - 111_2 = \underline{\hspace{2cm}}_2$

7) $11011_2 - 1110_2 = \underline{\hspace{2cm}}_2$

Convert the following decimal numbers to their binary equivalents:

8) $255_{10} = \underline{\hspace{2cm}}_2$

9) $89_{10} = \underline{\hspace{2cm}}_2$

10) $166_{10} = \underline{\hspace{2cm}}_2$

Convert the following hex numbers to their decimal equivalents:

11) $COA8_{16} = \underline{\hspace{2cm}}_{10}$

12) $FACE_{16} = \underline{\hspace{2cm}}_{10}$

13) $64F0_{16} = \underline{\hspace{2cm}}_{10}$

Find the following hexadecimal sums:

14) $CAB_{16} + BED_{16} = \underline{\hspace{2cm}}_{16}$

15) $3FF_{16} + 1_{16} = \underline{\hspace{2cm}}_{16}$

Find the following hexadecimal differences:

16) $FADE_{16} - BAD_{16} = \underline{\hspace{2cm}}_{16}$

17) $ACE9_{16} - 9ACE_{16} = \underline{\hspace{2cm}}_{16}$

Convert the following decimal numbers to their hex equivalents:

18) $69000_{10} = \underline{\hspace{2cm}}_{16}$

19) $1998_{10} = \underline{\hspace{2cm}}_{16}$

20) $32768_{10} = \underline{\hspace{2cm}}_{16}$

Convert the following octal numbers to their decimal equivalents:

21) $332_8 = \underline{\hspace{2cm}}_{10}$

22) $6240_8 = \underline{\hspace{2cm}}_{10}$

23) $5566_8 = \underline{\hspace{2cm}}_{10}$

Find the following octal sums:

24) $765_8 + 123_8 = \underline{\hspace{2cm}}_8$

25) $631_8 + 267_8 = \underline{\hspace{2cm}}_8$

Find the following octal differences:

26) $700_8 - 16_8 = \underline{\hspace{2cm}}_8$

27) $750_8 - 270_8 = \underline{\hspace{2cm}}_8$

Convert the following decimal numbers to their octal equivalents:

28) $6700_{10} = \underline{\hspace{2cm}}_8$

29) $1001_{10} = \underline{\hspace{2cm}}_8$

30) $254_{10} = \underline{\hspace{2cm}}_8$

Convert the following hex numbers to their binary equivalents:

31) $1FB_{16} = \underline{\hspace{2cm}}_2$

32) $ABC_{16} = \underline{\hspace{2cm}}_2$

33) $101F_{16} = \underline{\hspace{2cm}}_2$

Convert the following binary numbers to their hex equivalents:

34) $110110010_2 = \underline{\hspace{2cm}}_{16}$

35) $1101011001110_2 = \underline{\hspace{2cm}}_{16}$

36) $11000010111100_2 = \underline{\hspace{2cm}}_{16}$

Convert the following binary numbers to their octal equivalents:

37) $1101011001110_2 = \underline{\hspace{2cm}}_8$

38) $11000010111100_2 = \underline{\hspace{2cm}}_8$

Convert the following octal numbers to their binary equivalents:

39) $472_8 = \underline{\hspace{2cm}}_2$

40) $613_8 = \underline{\hspace{2cm}}_2$